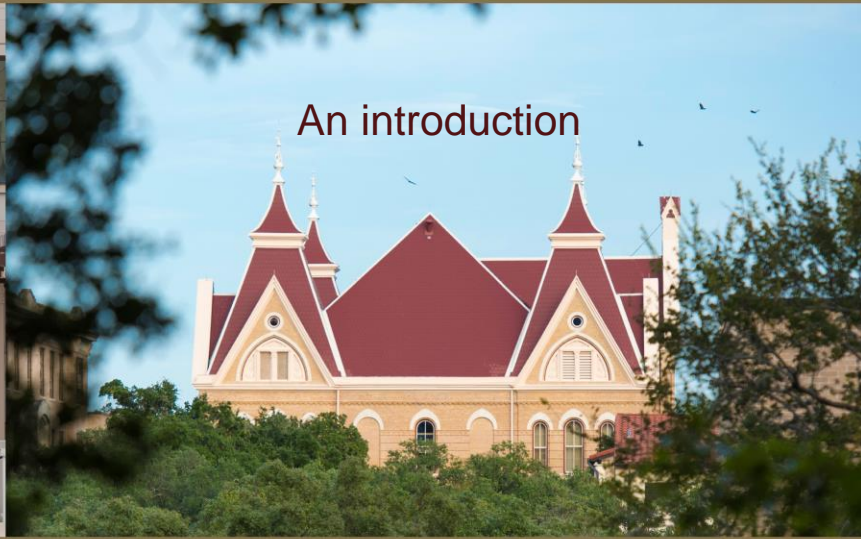


Research Data Management



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Questions to answer during this session

- ❖ What is RDM?
- ❖ What is Data management planning?
- ❖ How do I write a Data Management Plan?
- ❖ What is Metadata?
- ❖ When, why, and how do we share and publish data?



Research Data Management

Elements

- ❖ Data Collection
 - ❖ Storage
 - ❖ Use
 - ❖ Sharing
 - ❖ Preservation
- ❖ Failure to properly document how you manage your data diminishes its public value
 - Professor Lynn Jamieson, University of Edinburgh, MANTRA Data Management course

What we talk about when we talk about DATA ...in data management class

Typical Data

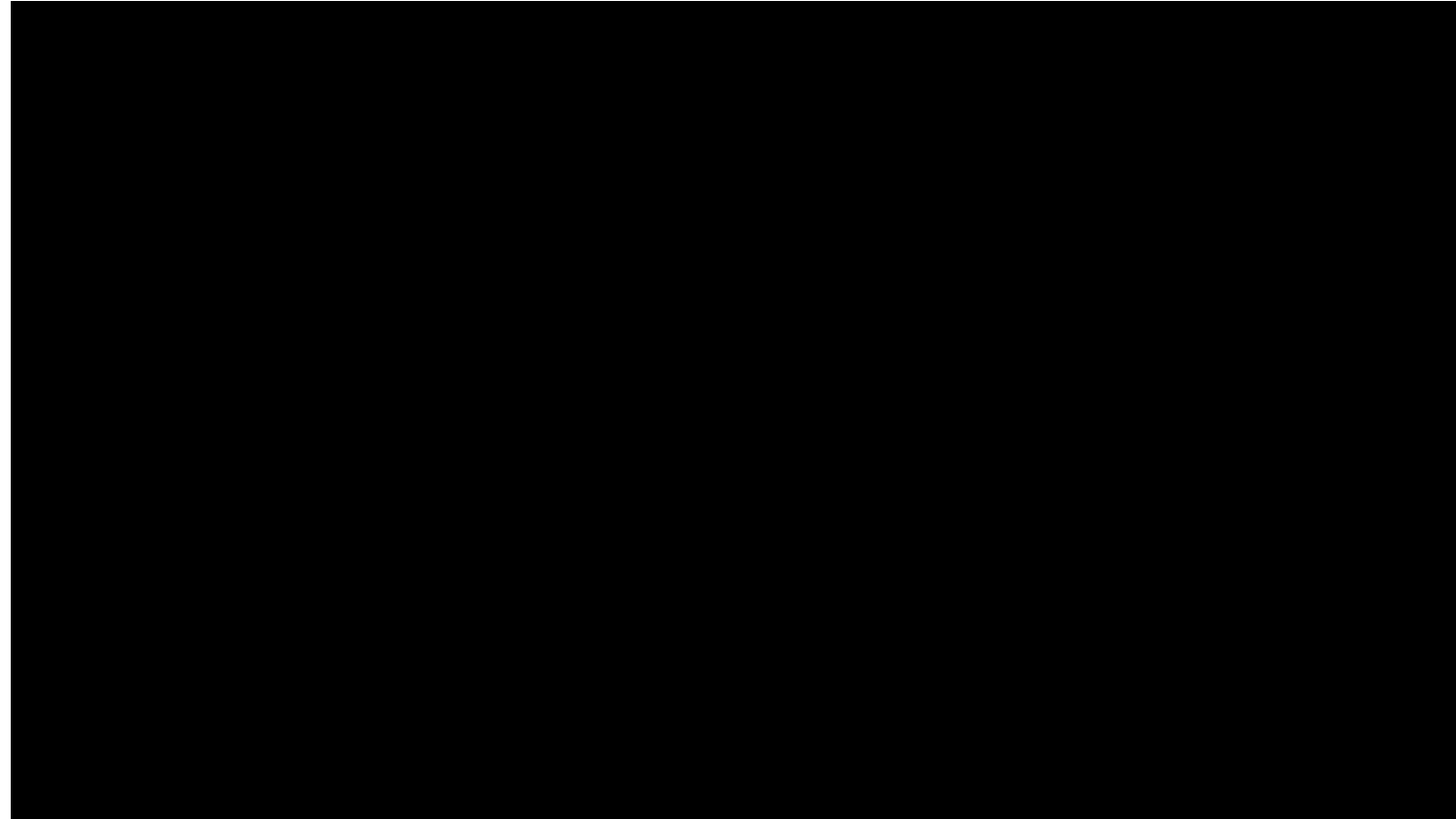
- ❖ Observational
- ❖ Experimental
- ❖ Quantitative
- ❖ Qualitative
- ❖ Derived/Compiled/Canonical/Secondary

...but also

- ❖ Readme file
 - Contains all pertinent information to recreate your results and/or use the data
 - Explains file names, explains field headings, how data gathered, etc.
- ❖ Generating materials
 - Ex: The photos used to stimulate a response in a patient
 - Ex: Lab Notebooks, Simulation files
- ❖ Analysis information
 - How you used the data for your interpretation (particularly for publications)
- ❖ Supplementary files
 - Recordings of interviews, photographs of sites, etc.



Data Management Planning



MANTRA Jeff Haywood – Advice to PhD students
Published by Data Library, available at

<https://www.youtube.com/watch?v=PXr14Urf268&list=PL2XF5RiVI7GOyWMmvh9Lcyi1JZ0rJ-Ldo>

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Poll

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What is in a Data Management Plan

- ❖ Data Collection
 - What data will you collect/create?
 - How will you do so?
- ❖ Documentation and Metadata
 - What documentation and metadata will accompany the data?
- ❖ Ethics and Compliance
 - How will you manage any ethical issues?
 - How will you manage copyright and IP issues?
- ❖ Storage and Backup
 - How will data be stored and backed up during the research?
 - How will you manage access and security?
- ❖ Selection and Preservation
 - Which data are of long-term value and should be retained, shared, and/or preserved?
 - What is the long term preservation plan for the dataset?
- ❖ Data Sharing
 - How will you share the data?
 - Are any restrictions on data sharing required?
- ❖ Responsibilities and Resources
 - Who will be responsible for data management?
 - What resources will you require to deliver your plan?

Content from Overview of dmptool.org: <https://dmptool.org/plans/34169/overview>



What is Metadata

- ❖ "data about data"
- ❖ information that describes or contextualizes the data

Types of Metadata

- ❖ Descriptive (citation)
- ❖ Administrative (system-generated)
- ❖ Structural (the real meat!)

Structural Metadata Schema

- ❖ You don't have to create your own metadata scheme
- ❖ ... and many times you shouldn't!

Field trip to [Digital Curation Center](#)



Why Share Data?

- ❖ Reproducibility of research (validation of your findings)
- ❖ Higher Impact
- ❖ Collaboration
- ❖ Innovation (through reuse)
- ❖ Preservation for your use
- ❖ Teaching
- ❖ Record of output
- ❖ Funder, institution, or publication mandate



Sharing: Mandated Publication

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In keeping with a worldwide trend, the United States government is increasingly requiring public (open) access to government information and publications and data arising from federally funded research. The mandates acknowledge privacy and confidentiality concerns and call for compliance within existing legal constraints on the sharing of information. Institutions receiving federal grants are responsible for complying with federal mandates. Non-compliance may impact receipt of future grants.

In addition to U.S. federal public access mandates, authors need to be aware of mandates imposed by overseas funders, philanthropic foundations, and academic institutions. The number of public access mandates has been increasing steadily for years.

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US government funders

In response to [US Directives](#), US federal agencies are increasingly requiring public access to research publications arising from their funding and management and sharing of the research datasets. As press releases, plans, policies or guidance documents become available, we'll provide access to them here.

Providing public access to data

[Open Data Requirements](#)
[Project Open Data](#)

Providing public access to publications

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Disciplinary Repositories, and others

Arguments for:

- ❖ Compare data among peers easily
- ❖ Join a prestigious group

Arguments against:

- ❖ Behind lock and key
- ❖ May not be publicly searchable
- ❖ Mandated metadata may not work with your project
- ❖ Loss of control

...or do this AND the other..

Field Trip:





Texas State University Dataverse

- ❖ Control your data
- ❖ Record your output, or a group's
- ❖ Publish data with your institution, and simply put metadata and a link to it in disciplinary or funder repositories

Field Trip:



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[Texas State University Dataverse](#) (Texas State University)

[Texas Data Repository Dataverse](#) > [Texas State University Dataverse](#)

Learn more:

<http://guides.library.txstate.edu/datarepository>



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A few brief notes, and what we didn't cover

Brief coverage:

- ❖ Storage and backups
- ❖ Preservation and Archiving
- ❖ Finding data to re-use
 - Data Citation
- ❖ File formats
 - Transformation
- ❖ File naming protocols

Not covered at all:

- ❖ Documentation
- ❖ Security
- ❖ Ethics
- ❖ Data integrity, data loss
- ❖ Anonymization of confidential data



References and places to learn more

- ❖ MANTRA: Self-Paced online RDM Tutorials: <https://mantra.edina.ac.uk/>
- ❖ Carnegie Mellon University Libraries' page on Public Access Mandates: <https://www.library.cmu.edu/datapub/sc/publicaccess/policies/usgovfunders>
- ❖ DMPTool.org: <https://dmptool.org/>
- ❖ Registry of Research Data Repositories: <https://www.re3data.org/>
- ❖ Texas State University Dataverse Data Repository: <https://dataverse.tdl.org/dataverse/txstate>
- ❖ Texas State University Guide to Dataverse: <http://guides.library.txstate.edu/datarepository>
- ❖ Library of Congress Recommended Formats Statement: <http://www.loc.gov/preservation/resources/rfs/>
- ❖ Email this librarian!: Dianna Morganti: diannamorganti@txstate.edu
- ❖ Or find your librarian: <http://www.library.txstate.edu/about/departments/ref/subjectlibrarians.html>



Thank you

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Schedule an Appointment:

<https://txstate.libinsight.com/consultation>

Ask a Librarian:

<http://askalibrarian.library.txstate.edu/>



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